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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,623	03/31/2001	Norman Van Den Bussche	H0001537	6960
128	7590	12/31/2003	EXAMINER	
HONEYWELL INTERNATIONAL INC.			TRAN, HIEN THI	
101 COLUMBIA ROAD			ART UNIT	
P O BOX 2245			PAPER NUMBER	
MORRISTOWN, NJ 07962-2245			1764	

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/823,623

Applicant(s)

BUSSCHE ET AL.

Examiner

Hien Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 and 10-22 is/are pending in the application.
- 4a) Of the above claim(s) 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-8, 10-22 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-8, 10-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, in claim 1, lines 4-5 the phrase of "... without desorption" is nowhere disclosed in the instant specification. It should be noted that any negative limitation or exclusionary proviso must have basis in the original disclosure. The mere absence of a positive recitation is not a basis for exclusion. See claim 19 likewise.

In claim 15, lines 7-8 the phrase of "allowing the catalyst to be used in a different environment than the alkali" is nowhere disclosed in the instant specification.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-8, 10-17, 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In claim 1, lines 4-5 it is unclear as to what is intended by “for adsorbing the NO<sub>2</sub> without desorption” and where it is disclosed in the instant specification. See claim 19 likewise.

In claim 15, lines 7-8 it is unclear as to what is intended by “allowing the catalyst to be used in a different environment than the alkali”, which environment is implied and where it is disclosed in the instant specification.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 4, 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Stiles et al (5,362,463).

Stiles et al discloses an apparatus comprising: a source of NO<sub>x</sub> gas; filter material including a catalyst, such as manganese oxide and copper oxide, etc., and an alkali, such as potassium carbonate, for reducing levels of NO<sub>x</sub> in the gas wherein the alkali is coated on the particles of the catalyst (col. 5, lines 28-50; col. 6, lines 14-31).

With respect to the phrase of “without desorption”, it is first unclear as to what is intended as set forth above. Second, Stiles et al discloses that the desorption reactor may be eliminated by placing the reduction catalyst downstream from the adsorbent. Furthermore, since the adsorbent used in Stiles et al is the same as that of the instant claim, it inherently has the same property thereof.

Instant claims 1, 4, 13 structurally read on the apparatus of Stiles et al.

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7. Claims 1, 3, 5, 8, 14, are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al (5,849,254).

Suzuki et al discloses an apparatus comprising: a source of NO<sub>x</sub> gas; filter material including a catalyst, such as manganese oxide and copper oxide, etc., and an alkali metal for reducing levels of NO<sub>x</sub> in the gas (col. 2, lines 39-48; col. 6, lines 49-67; Figs. 2, 3).

With respect to the phrase of “without desorption”, it is unclear as to what is intended as set forth above. Furthermore, since the adsorbent used in Suzuki et al is the same as that of the instant claim, it inherently has the same property thereof.

Instant claims 1, 3, 5, 8, 14 structurally read on the apparatus of Suzuki et al.

8. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 07-000743.

JP 07-000743 discloses an apparatus comprising: a source of NO<sub>x</sub> gas; filter material including a catalyst, such as manganese oxide, copper oxide, etc., and a carbonate of alkali for reducing levels of NO<sub>x</sub> in the gas (abstract).

With respect to the phrase of “without desorption”, it is unclear as to what is intended as set forth above. Furthermore, since the adsorbent used in JP 07-000743 is the same as that of the instant claim, it inherently has the same property thereof.

Instant claims 1-2 structurally read on the apparatus of JP 07-000743.

9. Claims 1, 4, 6-8, 10, 12-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Cole (5,656,244).

Cole discloses an apparatus comprising: a source of NO<sub>x</sub> gas; filter material including a catalyst, such as manganese oxide and copper oxide, chromium oxide, etc., and an alkali metal, such as potassium carbonate for reducing levels of NO<sub>x</sub> in the gas (col. 5, lines 17-38), the

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catalyst and alkali being operated at different temperature (col. 5, lines 45-60). Cole further discloses an air conditioning system, e.g. means for promoting heat transfer from the exhaust to the catalyst material 28, in which said means are downstream of the filter material 30 (col. 6, lines 63-65). Cole discloses a first support for the catalyst and a second support for the sorbent, the first and second support being spaced apart (Figs. 1-2). As best understood, since the two supports for the catalyst and sorbent are spaced apart, they are inherently independent optimized (col. 5, lines 17-66). Cole discloses that the sorbent with the catalyst and the noble catalyst are integrated in a housing (Figs. 2A, 2B).

With respect to the phrase of “without desorption”, it is unclear as to what is intended as set forth above. Furthermore, since the adsorbent used in Cole is the same as that of the instant claim, it inherently has the same property thereof.

Instant claims 1, 4, 6-8, 10, 12-17 structurally read on the apparatus of Cole.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. The art area applicable to the instant invention is that of NOx filter.

One of ordinary skill in this art is considered to have at least a B.S. degree, with additional education in the field and at least 5 years practical experience working in the art; is aware of the state of the art as shown by the references of record, to include those cited by applicants and the examiner (*ESSO Research & Engineering V Kahn & Co*, 183 USPQ 582 1974) and who is presumed to know something about the art apart from what references alone teach (*In re Bode*, 193 USPQ 12, (16) CCPA 1977); and who is motivated by economics to depart from the prior art to reduce costs consistent with the desired product characteristics. *In re Clinton* 188 USPQ 365, 367 (CCPA 1976) and *In re Thompson* 192 USPQ 275, 277 (CCPA 1976).

13. Claims 11-12, 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole (5,656,244).

The apparatus of Cole is substantially the same as that of the instant claim, but fails to disclose the specific location for the air conditioning system or the order of the catalysts and sorbent as claimed.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select an appropriate location for the air conditioning system, or the appropriate order for the catalysts and sorbent in the apparatus of Cole on the basis of its suitability for the intended use as a matter of obvious design choice and since it has been held

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that rearranging parts of an invention involves only routine skill in the art. In *re Japikse*, 86 USPQ 70.

Since it is unclear as to what applicants are attempting to recite as set forth above, as best understood, the catalyst and sorbent in the apparatus of Cole are spaced apart with the means for promoting heat transfer disposed therein, they are operated at different temperature (col. 5, lines 45-60).

### ***Response to Arguments***

14. Applicant's arguments filed 10/06/03 have been fully considered but they are not persuasive.

Applicants argue that the references do not teach a filtering system including a catalyst and an alkali for adsorbing the NO<sub>2</sub> without desorption. Such contention is not persuasive as first it is unclear as to what is intended by "an alkali for adsorbing the NO<sub>2</sub> without desorption" since such statement is nowhere disclosed in the instant specification. Second, the cited references disclose the system having a catalyst and an alkali of the same as that of the instant claims and therefore it inherently has the same property thereof.

Applicants argues that the references do not teach that the catalyst and the alkali are independently optimizable while the instant invention discloses that the catalyst and the alkali are operated at different temperatures which allow the catalyst and the alkali to be independent optimized. Such contention is not persuasive as, for example, Cole discloses that the catalyst is operated at higher temperature while the adsorbent is operated at lower temperature (col. 5, lines 45-60). The fact that the catalyst and the alkali of Cole are operated at different temperatures allows them to be independently optimized.



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Applicants argue that Cole does not teach an air conditioning system. Such contention is not persuasive as Cole does disclose an air conditioning system, e.g. means for promoting heat transfer from the exhaust to the catalyst material 28, said means disposed downstream of the filter material 30 (col. 6, lines 63-65).

***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

*Hien Tran*

HT  
December 15, 2003

**Hien Tran**  
**Primary Examiner**  
**Art Unit 1764**